

Applicants: S. Richard F. Sims et al  
Application No.: 10/675,596  
Filing Date: September 29, 2003  
Amendment Date: May 26, 2005  
Reply to Office Action of: March 30, 2005

### **AMENDMENTS to the CLAIMS**

This listing of claims replaces all prior versions and listings of claims in the application:

#### **Listing of Claims:**

1. **(currently amended):** A Weather-Agile Automatic Target Recognition System for performing a rapid target update in diverse weather conditions, ~~said system adapting to changing climatic conditions for maximum performance efficiency,~~ said system comprising: a primary multi-spectral target sensing means ~~capable of for sensing a diversity of~~ targets in diverse climatic conditions and generating target signature corresponding to said sensed target; a plurality of weapons; a plurality of secondary multi-spectral target sensing means, one of said secondary sensing means being mounted on one of said weapons and enabling said weapon to seek the sensed target ~~in the extant climatic~~ any weather condition, said primary and secondary sensing means cooperating with each other to destroy selected targets; and a control center having therein pre-existing target, weaponry and environmental databases, said center positioned to communicate with said primary and secondary multi-spectral target sensing means, said center receiving said target signature from said primary sensing means and processing said signature using said pre-existing databases prior to transmitting said processed signature to said secondary sensing means residing on a weapon selected as having the greatest potential to accomplish a successful destruction of the sensed target.
2. **(original):** A Weather-Agile Automatic Target Recognition System for performing a rapid target update as set forth in claim 1, wherein said primary multi-spectral target sensing means is mounted on an airborne surveillance platform positioned to observe a target scene and said control center transmits to

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said primary sensing means said pre-existing databases to facilitate efficient surveillance by said primary sensing means.

3. **(currently amended):** A Weather-Agile Automatic Target Recognition System for performing a rapid target update, ~~said system adapting to changing climatic conditions for maximum performance efficiency,~~ said system comprising: a primary target sensing means mounted on an airborne surveillance platform, said primary sensing means ~~being capable of~~ sensing a diversity of targets in a first given climatic condition and generating target signature corresponding to said sensed target; a plurality of weapons, said weapons each having an individual secondary target sensing means, said individual sensing means enabling said weapons to seek the sensed target in ~~the extent~~ a second given climatic condition, said primary and individual secondary sensing means cooperating with each other to destroy selected targets; and a control center having therein pre-existing target, weaponry and environmental databases, said center positioned to communicate with said primary and individual secondary sensing means, said center transmitting to said first sensing means said pre-existing databases to facilitate effective surveillance by said first sensing means, receiving from said primary sensing means said target signature and processing said signature using said pre-existing databases to produce processed target signature, said center subsequently transmitting said processed target signature to said individual sensing means residing on a weapon selected as having the greatest potential to accomplish a successful destruction of the sensed target.
4. **(currently amended):** A Weather-Agile Automatic Target Recognition System for performing a rapid target update as set forth in claim 3, wherein said primary sensing means comprises a synthetic aperture radar for maximum target recognition in ~~few~~ cloudy, foggy or rainy weather, and each individual secondary sensing means comprises a synthetic aperture radar for maximum target recognition and destruction in ~~few~~ cloudy, foggy or rainy weather in response to said processed target signature.

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5. **(currently amended):** A Weather-Agile Automatic Target Recognition System for performing a rapid target update as set forth in claim 3, wherein said primary sensing means comprises a synthetic aperture radar for maximum target recognition in ~~few~~ cloudy, foggy or rainy weather, and each individual sensing means comprises a laser radar for maximum target recognition and destruction in fair weather in response to said processed target signature.
6. **(currently amended):** A Weather-Agile Automatic Target Recognition System as set forth in claim 3, wherein said primary sensing means comprises a synthetic aperture radar for maximum target recognition in ~~few~~ cloudy, foggy or rainy weather, and each individual sensing means comprises an electro-optical sensor for maximum target recognition and destruction in fair weather in response to said processed target signature.
7. **(original):** A Weather-Agile Automatic Target Recognition System as set forth in claim 3, wherein said primary sensing means comprises an electro-optical sensor for target recognition in fair weather, and each individual sensing means comprises an electro-optical sensor for maximum target recognition and destruction in fair weather in response to said processed target signature.
8. **(currently amended):** A Reconfigurable Automatic Target Recognition System for performing a rapid target update in diverse weather conditions ~~changing climatic conditions for maximum performance efficiency~~, said system comprising: a plurality of primary target sensing means; a plurality of airborne surveillance platforms, each of said primary target sensing means being mounted onto one of said platforms such that there are no more than one primary target sensing means on any one platform, each of said primary target sensing means ~~being capable of~~ sensing a diversity plurality of targets in a given climatic condition and generating target signature corresponding to said sensed target; a plurality of weapons, said weapons each hosting an individual secondary target sensing means such that each weapon hosts no more than one individual secondary target sensing means, said individual sensing means

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enabling its hosting weapon to seek the sensed target in ~~the extant~~ any climatic condition, said primary and individual secondary sensing means cooperating with each other to destroy selected targets; and a control center having therein pre-existing target, weaponry and environmental databases, said center positioned to communicate with said plural primary and individual secondary sensing means, said center receiving said target signature from one or more of said primary sensing means and processing said signature using said pre-existing databases prior to transmitting said processed target signature to said individual sensing means hosted in a weapon selected as having the greatest potential to accomplish a precision destruction of the sensed target.

9. **(currently amended):** A Reconfigurable Automatic Target Recognition System for performing a rapid target update in ~~changing climatic~~ diverse weather conditions as set forth in claim 8, wherein some of said primary target sensing means are synthetic aperture radars and the others are electro-optical sensors.
10. **(currently amended):** A Reconfigurable Automatic Target Recognition System as set forth in claim 9, wherein some of said individual secondary target sensing means ~~hosted by said weapons, one secondary target sensing means on one weapon,~~ are synthetic aperture radars, some are laser radars and yet others are electro-optical sensors.